DOCUMENT RESUME

ED 411 233 SP 037 523

AUTHOR Kitsantas, Anastasia
TITLE Self-Monitoring and Attribution Influences on Self-Regulated Learning of Motoric Skill.
PUB DATE 1997-03-00
NOTE 17p.; Paper presented at the Annual Meeting of the American Educational Research Association (Chicago, IL, March 24-28, 1997).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Attribution Theory; Grade 10; Grade 9; High School Students; High Schools; Physical Education; *Psychomotor Skills; *Self Efficacy; *Self Evaluation (Individuals)
IDENTIFIERS Attribute Identification; *Self Monitoring; *Self Regulated Learning

ABSTRACT

This study examined the influence of female students' (N=90) self-monitoring and attribution on achievement when throwing darts. It was hypothesized: (1) that students who set strategic process goals and used self-evaluative recording would attribute outcomes to strategic causes; and (2) that students who set outcome goals and did not use self-evaluative recording would attribute outcomes to nonstrategic sources. Experimental conditions were based on types of self-regulatory treatments: strategy (analytic or imaginal), goal (process or outcome), and self-evaluation (present or absent). Students watched demonstrations of the skills individually then had 20 minutes of dart throwing practice. After practice, all students completed evaluations of their attributions (why they thought they missed the bull's eye) and posttests of dart throwing proficiency, self-efficacy, self-reaction, and intrinsic interest. Results supported both hypotheses. Since self-regulated strategy process goals and self-evaluation influence the types of attributions students make, it is suggested that teachers help them set strategic process instead of outcome goals, keep performance records, and evaluate their progress. (Contains 12 references.) (SM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 411 233

Self-Monitoring and Attribution Influences on Self-Regulated Learning of Motoric Skill

Anastasia Kitsantas

CUNY Graduate School

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

A. Kitsantas

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

A paper presented at the annual meeting of the American Educational Research Association, Chicago, IL, March, 1997.

SP037523

BEST COPY AVAILABLE

Abstract

Although the influence of attributions on achievement has been studied previously, there have been few attempts to investigate their mediational role during self-regulated learning. Attributions of causality influence self-regulation when students compare their self-monitored progress with their goals and evaluate their performance. It is hypothesized that students who set strategic process goals and monitor will attribute outcomes to strategic causes, whereas students who set outcome goals will attribute outcomes to nonstrategic sources. These differences in attributions are expected to not only enhance motoric acquisition, but also students' perceptions of self-efficacy, self-evaluations, and intrinsic interest in the task. Support was found for each of these hypotheses. The results were interpreted in terms of a social cognitive model of self-regulated learning in which strategic attributions play a key mediational role during cyclic self-reflection.

There is extensive evidence to show that setting strategic process goals, self-monitoring, self-evaluating and attributing negative outcomes to strategic sources instead of ability, effort or other sources, play a significant role in increasing, skill, self-efficacy beliefs, positive self-reactions, and intrinsic interest in task (Zimmerman, 1989; Zimmerman & Kitsantas, 1996; Schunk & Swartz, 1993). However, there have been few attempts to determine whether goal-setting, self-monitoring and self-evaluation influence the types of attributions that students make.

Attributions to different sources, such as luck of strategy, ability, effort and other sources influence self-regulation when students compare their goals with their progress and evaluate their performance. According to Zimmerman and Martinez-Pons (1992) "strategy attributions are a vital self-judgmental process linking strategy monitoring and use". Specifically, it has been shown that students who report failure attributions to ineffective use of strategies, report higher levels of self-efficacy and remain motivated to work efficiently. Conversely, students who attribute failure to ability, effort, or even worse to luck hold low levels of self-efficacy and they hold beliefs such as they cannot succeed on their own (Anderson & Jennings,

1980; Clifford 1986; Zimmerman & kitsantas, 1997).

In this study it was hypothesized that students who focus on strategic process goals and use self-evaluative recording, a formal form of self-monitoring, will attribute outcomes to strategic causes, whereas students who set outcome goals and do not use self-evaluative recording will mostly attribute outcomes to nonstrategic sources. These differences in attributions are expected to not only enhance motoric acquisition of a complex task, but also students' perceptions of self-efficacy, self-reactions, and intrinsic interest in the task. I will discuss the results in terms of a social cognitive model of self-regulated learning in which strategic attributions play a key mediational role during cyclic self-reflection.

Methods

Sample

Ninety girls from four ninth and tenth grade physical education classes of a parochial all-girls school participated in this study. This female population was selected because very few of these young women had previous experience with the selected task, dart throwing. They ranged in age from 14-16 years (M = 15.16). These subjects came from predominantly middle class families. Over 50% of their parents were college educated.

Task materials

A dart throwing game was used which included a wooden framed target board and six steel-headed, plastic-feathered darts. The target was made up of 7 regular concentric circles with a "bullseye" having a radius of 1/2 inch, each succeeding circle increasing in radius by one inch. Each zone or circle were assigned a numerical value, beginning with a center value of 7 and successively diminishing in assigned values by one until the outermost circle has a value of one. Six darts were given to the subjects to perform the task.

Measures

Dart-throwing skill. The posttest dart-throwing measure of skill involved the average of six darts and thus could range between 0 and 7 points.

Self-efficacy scale. The self-efficacy measure included items regarding the subjects' capability to throw darts. It involved the average confidence estimates (0-100%) for getting a final score of 1, 3, 5, or 7 with a dart.

Self-reactions scale. The self-reactions measure indicated how satisfied each participant was with her overall dart throwing performance. It involved using a rating measure on a scale of 0 to 100%.

Intrinsic interest scale. A ranking intrinsic interest measure was also used to assess dart throwing in comparison with four other sports, namely volleyball, soccer, tumbling, and apparatus gymnastics. Each girl's score was determined by her ranking of dart throwing.

Attribution scale. Finally, the young women in all treatment groups, including the control group were asked to answer the following questions after 3 minutes of practice: "Why do you think you missed the bull's eye at the last trial?" and "what can you do to improve your performance". Students' written answers were grouped according to their reasons for failure, whether because of lack of strategy, effort, ability, practice, "I don't know" or "other".

Design and Procedure

The 90 subjects were randomly assigned to one of eight experimental conditions and a practice control group, and thus there were 10 girls in each group.

Insert Figure 1 about here

The experimental conditions were based on the type of self-regulatory treatments--strategy (analytic or imaginal); goal

(process or outcome); self-evaluation (present or absent). The conditions were: (a) analytic strategy, focus on a outcome goal and no self-evaluation, (b) analytic strategy, focus on a process goal and no self-evaluation, (c) analytic strategy, outcome goal and self-evaluation, (d) analytic strategy, process goal and self-evaluation, (e) imaginal strategy, focus on a outcome goal and no self-evaluation, (f) imaginal strategy, focus on a process goal and no self-evaluation, (g) imaginal strategy, outcome goal and self-evaluation and h) imaginal strategy, process goal and self-evaluation. The young women were taken into a separate room and were tested individually by the experimenter. The first 10 minutes of the session were devoted to demonstrating the skill and explaining the scoring system. All experimental groups and the control group listened to the following videotaped instructions and watched the demonstration about throwing the darts (see McClintock, 1977; McLeod, 1977). Experimental subjects were then given 20 minutes to practice dart throwing, and thus the time was equalized for each girl but not the throwing trials.

After practice was completed, all experimental groups, including the control group were tested for attributions and post-tested for dart throwing proficiency, self-efficacy, self-reaction, and intrinsic interest.

Results

Analysis of Attributions

Subjects' attributions are displayed in Table 3. These attributions were classified by two coders and a high degree (99%) of inter-observer agreement was found. The subjects' responses were classified into six categories: strategy, practice, effort, ability, "I do not know" and other. The data revealed that girls who self-evaluated attributed their failure to hit the "bullseye" to ineffective strategy use whereas girls who did not self-

---

Insert Table 1 about here

---

evaluate including the control attributed their failure to ability and effort, chi square (5) = 57.00, $p < .01$.

Correlations between subjects' attributions and the dependent variables are shown in Table 2. These Spearman correlations were conducted to determine the predictiveness of these attributions

---

Insert Table 2 about here

---

to other outcomes. Girls who attributed their failure to hit the "bullseye" to strategy insufficiency demonstrated significantly higher levels of self-efficacy perceptions, achieved higher levels of dart-skill, were more satisfied with their performance and showed greater intrinsic interest in the dart game. In contrast, girls who attributed their failure to ability or effort displayed low levels of self-efficacy, dart-skill, self-reactions and intrinsic interest.

Discussion

Support was found for each of the hypotheses. Students who focused on process goals made significantly more strategic attributions than students who focused on outcome goals. Compared to students who made nonstrategic attributions for failure, those who attributed learning results to strategy insufficiency displayed significantly higher levels of self-efficacy perceptions, achieved higher levels of motoric skill, were more satisfied with their performance and showed greater intrinsic interest in the skill. In addition, students who self-evaluated tended to attribute poor outcomes to improper strategy use and practice, whereas students who didn't self-evaluate tended to attribute them to a lack of ability or to insufficient effort. These findings are consistent with prior research in both

academic (Zimmerman, 1990; 1994; 1995) and sports settings (Zimmerman & Kitsantas, 1995; 1997b; Kitsantas & Zimmerman, 1997a).

It is concluded that self-regulated strategy process goals and self-evaluation influence the types of attributions students make and therefore, teachers and coaches should assist students to set strategic process instead of outcome goals, keep records of their performance, and evaluate their progress. The use of these self-regulatory processes will prompt students to attribute negative outcomes strategically, preserve their self-efficacy beliefs, sustain their motivation, and improve their potential to learn and their intrinsic interest in mastering the task during the long hours of practice on their own necessary to achieve peak performance.

BIBLIOGRAPHY

Anderson, C.A., & Jennings, D.L. (1980). When experiences of failure promote expectations of success: The impact of attributing failure to ineffective strategies. Journal of Personality, 48, 393-405.

Clifford, M. (1986). Comparative effects of strategy and effort attributions. British Journal of Educational Psychology, 56, 75-83.

Kitsantas, A., & Zimmerman, B.J.(1997a).Self-regulation of motoric learning: A strategic cycle view. Manuscript submitted for publication.

Schunk, D. H. & Swartz, C. W. (1993). Goals and progress feedback: Effects on self-efficacy and writing achievement. Contemporary Educational Psychology, 18, 337-354.

Zimmerman, B.J. (1989). A social cognitive view of self-regulated academic learning. Journal of Educational Psychology, 81, 329-339.

Zimmerman, B.J. (1990). Self-regulated learning and academic achievement: An overview. Educational Psychologist, 25, 3-17.

Zimmerman, B.J. (1994). The development of self-regulatory

skill: A social cognitive view. An invited address presented at the State University of New York Sesquicentennial Celebratory Symposium in the Department of Educational Psychology and Statistics, April, 1994.

Zimmerman, B.J.(1995). Self-efficacy and educational development. In A. Bandura (Ed.), Self-efficacy in changing societies. New York: Cambridge University Press.

Zimmerman, B.J., & Kitsantas, A. (1997b). Developmental phases in Self-regulation: Shifting from process goals to outcome goals. Journal of Educational Psychology, 89,(in Press).

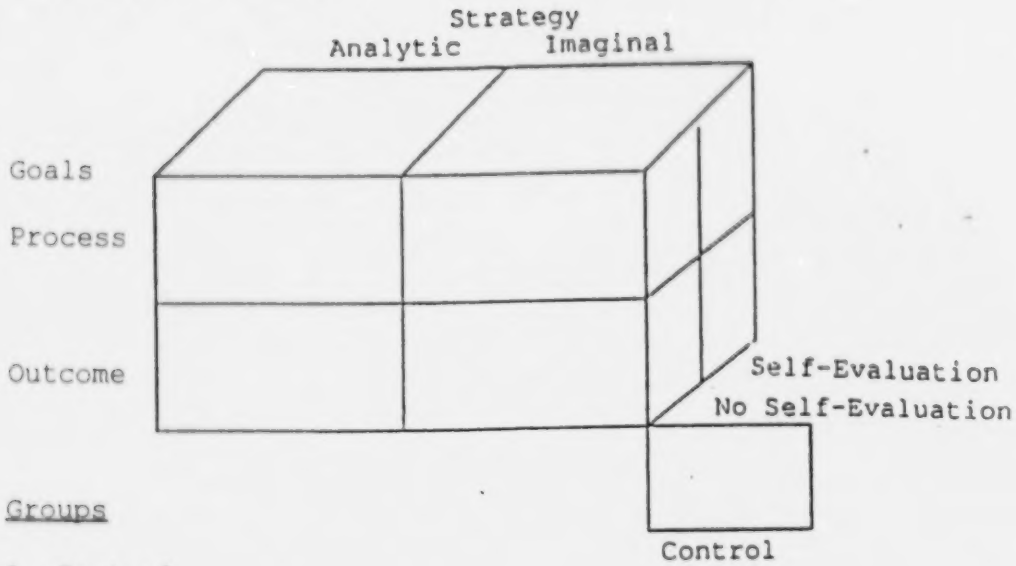
Zimmerman, B.J., & Kitsantas, A. (1996). Self-regulated learning of a motoric skill: The role of goal setting and self-monitoring. Journal of Applied Sports Psychology, 8, 69-84.

Zimmerman, B.J. & Kitsantas, A. (1995, August). Strategy use and perceived self-efficacy: A reciprocal relation. In P.H. Winne (Chair) Becoming strategic learner-from Knowledge to self-regulation. Symposium conducted at the 103rd Annual convention of the American psychological Association, New York, New York.

Zimmerman, B. J. & Martinez-Pons, M. (1992). Perceptions of efficacy and strategy use in the self-regulation of learning. In D. H. Schunk & J. Meece (Eds.), Student perceptions in the

Figure 1

Design of the Study



Groups

1. Control
2. Analytic strategy, outcome goal and no self-evaluation
3. Analytic strategy, process goal and no self-evaluation
4. Analytic strategy, outcome goal and self-evaluation
5. Analytic strategy, process goal and self-evaluation
2. Imaginal strategy, outcome goal and no self-evaluation
3. Imaginal strategy, process goal and no self-evaluation
4. Imaginal strategy, outcome goal and self-evaluation
5. Imaginal strategy, process goal and self-evaluation

BEST COPY AVAILABLE

Table 1

Frequencies of attributions for the control and the experimental groups

Groups	Attributions					
	Strategy	Practice	Effort	Ability	I Do Not Know	Other
No Self-Evaluation Control	0	2	3	3	1	1
Analytic Strat. Fixed cue	0	2	2	4	2	0
Analytic Strat. Dynamic cue	2	0	3	3	1	1
Imaginal Strat. Fixed cue	0	0	4	3	1	2
Imaginal Strat. Dynamic cue	0	0	6	2	0	2
Self-Evaluation						
Analytic Strat. Fixed cue	5	2	2	0	1	0
Analytic Strat. Dynamic cue	8	1	0	0	1	0
Imaginal Strat. Fixed cue	7	3	0	0	0	0
Imaginal Strat. Dynamic cue	7	2	0	0	1	0

Table 2

Correlations between Attributions and Dependent Measures (for all Treatment and Control Groups)

	Attributions		
Variable	Strategy	Ability	Effort
Self-Efficacy	.34**	-.31**	-.33**
Dart-Skill	.31**	-.26*	-.37**
Self-reactions	.27**	-.31**	-.32**
Intrinsic int.	-.33**	.26*	.35**
Self-evaluation	.56**	-.42**	-.40**

* $p < .05$ ** $p < .01$

note: Intrinsic interest ranking reverse the usual order, 1 = first and 5 = last

BEST COPY AVAILABLE